CWMD COUNTERING WEAPONS OF MASS DESTRUCTION

Multidisciplinary Partnerships in Chemical Security and Preparedness

Chemical Sector Security Summit
New Orleans, LA

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Moderator

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Thomas Munoz

Homeland Security Director / Emergency Management Coordinator

Texas City, TX

Texas City EST. 1911

Texas City, TX

- Produces approximately 13% of the nation's fuel
- 3rd largest port in Texas and 7th largest in the U.S.
- Low-to-high risk industrial plants (MSRAM)

Paul Mason

Technical Services Specialist

Performance Materials and Technologies
Honeywell International

CWMD COUNTERING WEAPONS OF MASS DESTRUCTION

Michael Mastrangelo

Director of Institutional Preparedness

University of Texas – Medical Branch
Galveston, TX

utmb Health

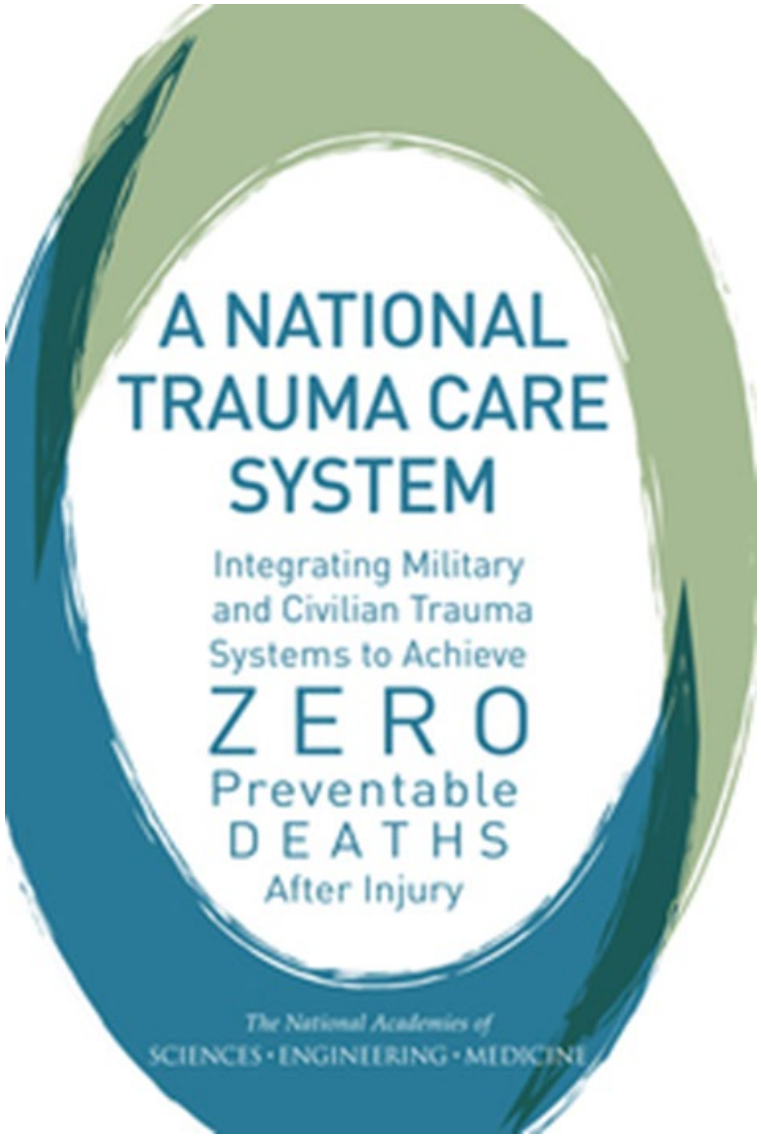
Homeland Security

Countering Weapons of Mass Destruction

Texas City - Incidents

- 1987 HF Incident
- 937 patients seen at UTMB and Mainland Medical Center
- Smaller incidents since then:
  - 2016 with 16 occupational injuries (one month before our annual HF exercise with industry)
  - 2018 Incident

Zero Preventable Deaths



Real incident in Texas City

Industry notified ER of incoming patients

Whole Community Preparedness

- 2014 – work with community/industry to improve preparedness
- Joint Exercises – increasing complexity
  - Honeywell
  - Marathon
- Whole Community Response
- UTMB HF Community Symposia

Whole Community - Industry

Joint Exercises

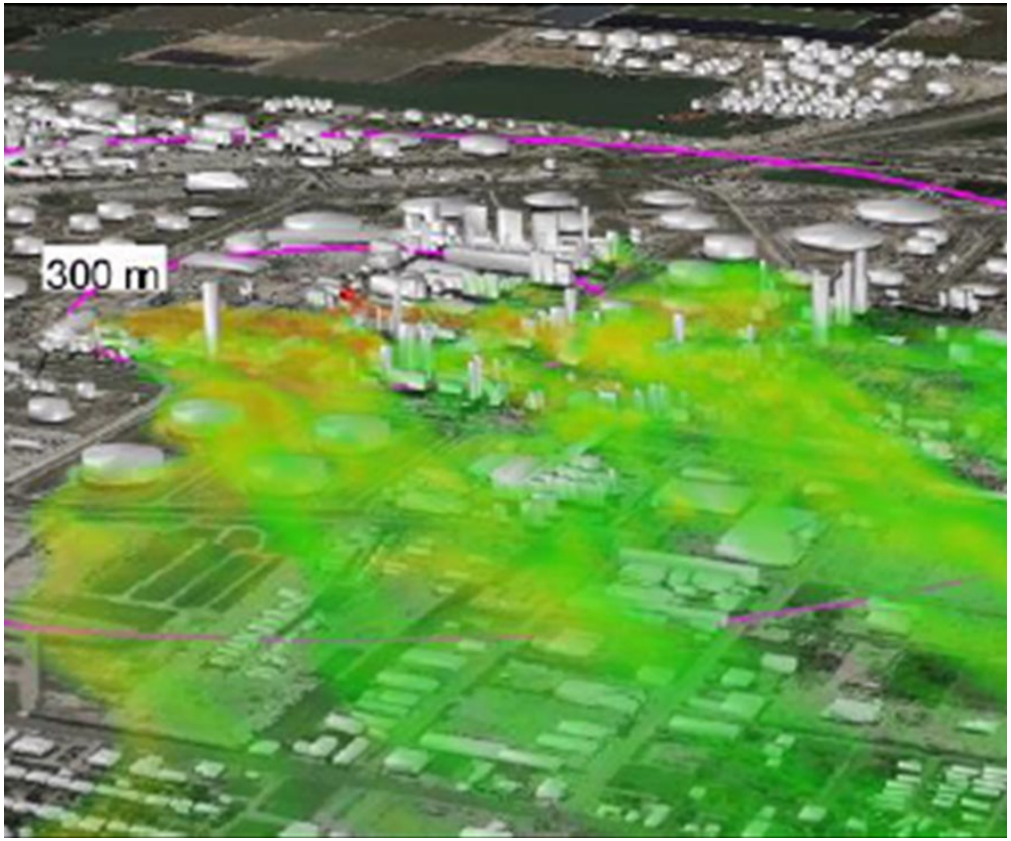
Handshake agreement (CaG)

Source of expertise on HF

Work with Lawrence Livermore National Laboratory

Work with Argonne National Laboratory

Funding from Texas National Security Network

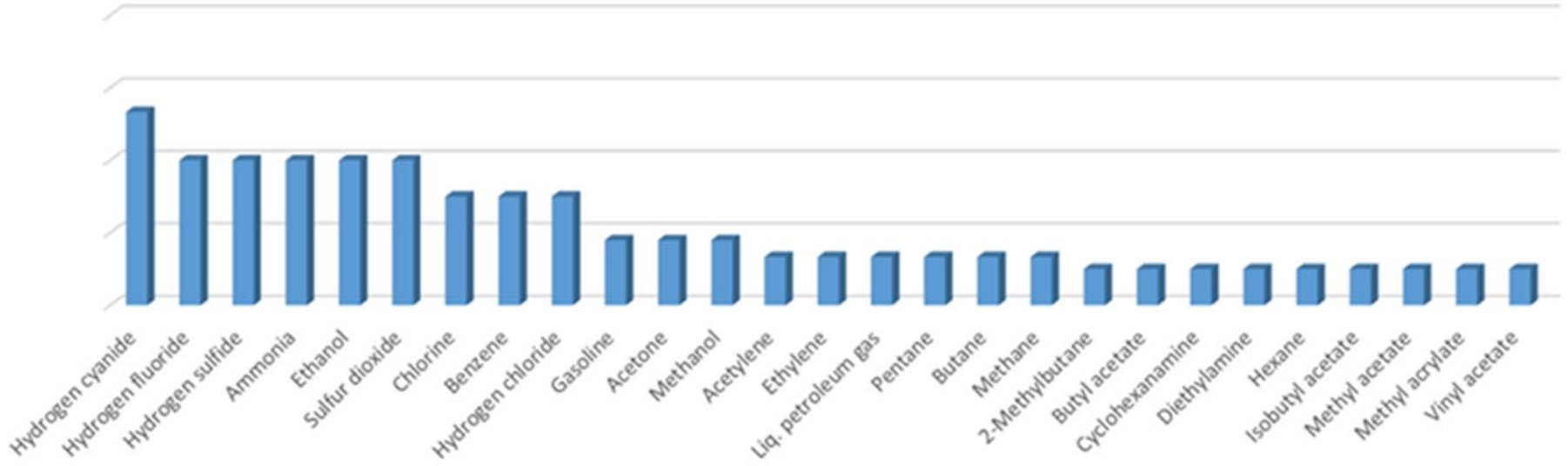


COMPLEX COORDINATED TERRORIST ATTACK (CCTA) - GRANT

Basis of proposal – Chemical CCTA

$977K 3 – year grant to improve planning, preparedness, response capabilities

Risk


Hydrogen cyanide
Hydrogen fluoride
Hydrogen sulfide
Ammonia
Ethanol
Sulfur dioxide
Chlorine
Benzene
Hydrogen chloride
Gasoline
Acetone
Methanol
Acetylene
Ethylene
Liq. petroleum gas
Pentane
Butane
Methane
2-Methylbutane
Butyl acetate
Cyclohexanamine
Diethylamine
Hexane
Isobutyl acetate
Methyl acetate
Methyl acrylate
Vinyl acetate

LOCAL CUSTOMIZATION OF THE CHEMPACK

- **Hydrogen Cyanide** **(Medical Counter-measure: Hydroxocobalamin)**
- **Hydrogen Fluoride** **(Medical Counter-measure: Calcium Gluconate)**
- **Hydrogen Sulfide** **(MCM – Amyl nitrite, sodium nitrite)**
- **Ammonia**
- **Ethanol**
- **Sulfur Dioxide** **(no antidote)**
- **Chlorine**
- **Benzene**
- **Hydrogen Chloride**
- **Sulfuric Acid**

DHS – RESPONSE RISK ASSESSMENT

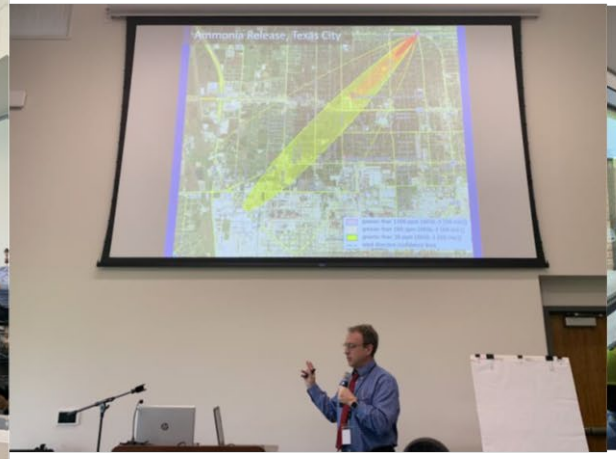
Gather response capability data from first responders

Use HF scenario to challenge response capabilities

Initially Texas City

With CCTA – All of Galveston County

March 2019
DHS Response Decision Coordination Workshop



What does community preparedness look like?

Chemical Terrorism Risk Assessment

Homeland Security
Science and Technology

2012 CTRA Compound List

Acrolein	Chloroform	HF > 50%	Phosgene Oxime, C
Acrylonitrile	Chloromethyl ether	Hydrazine	Phosphamidon
Adamsite	Chloromethyl methyl ether	Hydrogen Bromide	Phosphine
Aldicarb	Chloropicrin	Hydrogen Chloride (anhydrous)	Phosphorus oxychlori
Allyl Alcohol	Chlorosarin	Hydrogen Cyanide	Phosphorus Trichlorid
Aminopyridine	Chlorosoman	Hydrogen Fluoride (anhydrous)	Picrotoxin
Ammonia > 20 %	Chlorosulfonic Acid	Hydrogen Selenide	Potassium Cyanide
Ammonia, anhydrous	Chlorpyrifos	Hydrogen Sulfide	Propionitrile
Ammonium Metavanadate	Cyanogen Chloride (CK)	Isobutyronitrile	Propyleneimine
Anatoxin	Cyclohexylamine	Isopropyl chloroformate	R-33, R-VX
Aniline	Cyclosarin, GF	Lewisite, L	Sarin, GB
Arsenic Trioxide	2,3-Diacetylmorphine	Mercuric Chloride	Sodium Azide
Arsine	Diborane	Methamidophos	Sodium Fluoroacetat
Benzenethiol	Dicrotophos	Methanethiol, Methyl Mercaptan	Soman, GD
Boron trichloride	α, α-Dimethylbenzyl Hydroperoxide	Methomyl	Strychnine
Boron Trifluoride	Dimethyl Mercury	Methyl Acrylonitrile	Sulfotep
BF3 methyl ether complex	Dimethyl Sulfate	Methyl hydrazine	Sulfur dioxide (anhydro
Brodifacoum	Diphacinone	Methyl Isocyanate	Sulfur Mustard, HD
Bromadiolone	Diphenylchloroarsine	Methyl thiocyanate	Sulfur Trioxide
Bromine	Diphenylcyanoarsine	Nitric acid	Tabun, GA
Bromomethane	Disulfoton [ISO]	Nitric oxide	Tetraethyl Pyrophosph
Bromopropyne	Disulfur Dichloride	Nitrogen Mustard	Tetraethyllead
2-Butanone Peroxide	Epichlorohydrin	Oleum	TETS
BZ	Ethyl Chloroacetate	Osmium Tetroxide	Thallium Sulfate
Carbon disulfide	Ethyl Dichloroarsine, ED	Parathion	Titanium tetrachlorid
	Ethylenediamine	Pentacarbonyliron	Vanadium Pentoxid
Chlorfenvinphos	Fluorine	Perchloromethylmercaptan	VX
Chlorine	Formaldehyde, solns.	Perfluoroisobutene	
Chlorine dioxide	HCl > 37 %	Phorate	
Chloroacetone	Hexachlorocyclopentadiene	Phosgene (CG)	

Conclusion

Developed a good model that other communities can adopt

Would encourage industry to use for their Risk Management

Public / Private Partnership

Community Preparedness - Security

Michael Dillon

Staff Scientist

Lawrence Livermore National Laboratory
U.S. Department of Energy

Lawrence Livermore National Laboratory

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Q & A

Homeland Security